

Some of the most violent of the continental overflows into the valley are caused by a stagnant Great Basin HIGH being wedged in between a cyclone lingering over the coast of southern California, and a companion or secondary cyclone over Arizona and New Mexico. In this case a high-pressure wedge extends down Nevada and the Sierra Mountains. Such a squeeze results in a forcing of air out of the HIGH with spilling of air down to the lower San Joaquin Valley. The wind pours through convenient mountain passes or over the crests of low ranges. At the same time, Los Angeles might experience a Santa Ana type of wind, blowing from the northeast down to the sea. High pressure overflow winds are evidenced at nearby mountain stations by

strong northeasterlies and these same winds are in evidence at nearby coast stations, often to high altitudes. On one occasion the anticyclonic circulation was apparent over California even at the 10,000-, 12,000-, and 14,000-foot levels. These same winds are veered when reaching the San Joaquin Valley and blow from the southeast. As the barometer falls steadily with the blowing of the southeast winds, the anticyclone gradually expends itself and disappears, following which, in winter, a new air mass overlies the lower valley and the usual condition of valley ground fog may be forestalled for some period.

The third synoptic situation of low pressure developing locally in the Great Valley is attended by nearly the same phenomena as the approach of an ocean cyclone.

IS LOW RELATIVE HUMIDITY A GOOD INDICATION OF PRECIPITATION WITHIN THE NEXT 48 HOURS?

By A. R. LONG

[Weather Bureau office, Memphis, Tenn., September 1934]

(Abstract ¹)

A tabulation of 7,305 observations of 8 a. m. (seventy-fifth meridian time) relative humidity at Memphis, Tenn., during 1907-26, inclusive, classified by wind direction and season, and compared with the occurrence of precipitation during the following 12-, 24-, 36-, and 48-hour periods, led to the following results (after the omission of cases with less than 10 observations):

In all seasons, when the 8 a. m. humidity is from 51 to 80 percent, the chances for precipitation within 36 hours or less are very small, and remain small even up to 48 hours; from 81 to 90 percent, the chances increase, but

the highest probability is only 0.81 within 48 hours with an east wind; from 91 to 100 percent, the chances (which, of course, vary with wind direction) are considerably greater.

These results do not bear out the contention sometimes made that low humidity is a good indication of precipitation within the next day or two; on the contrary, low humidity appears to be a good indication that precipitation will *not* occur within 48 hours. As a rule, the *higher* the humidity, the greater the chances that precipitation will occur within 48 hours.

AN UNUSUAL SNOWSTORM IN SOUTHEASTERN WEST VIRGINIA

By W. J. HUMPHREYS

[Weather Bureau, Washington, September 1934]

The storm in question was that of February 26, 1934. The phenomena mentioned were described to me early in the following September by Mr. A. M. Eppling and others, of Gap Mills, W. Va. Here the snow fell until about 27 inches deep, and then changed to rain, followed by a freeze, that covered the whole with a sheet of ice 1 to 2 inches thick. A rare joy it was to boys with skates and sleds, but to stockmen a horror, for hundreds of sheep perished beneath it and neither cattle nor horses could cross it, even a short distance for feed or water, since at every step or attempted step the jagged edges of the broken crust cut their legs.

Then as the landscape lay bleak and imprisoned came mysterious sounds—muffled rumbles as of distant thunder

or far-off blasting, owing, as finally found, to the sudden ripping of long rifts in the dense, thick glaze. Some of these were 2 inches wide, half a mile, or more, in length and quite straight.

Presumably it was a decrease in the temperature of the ice crust that caused it to become so strained that it finally broke; and a crack once started in this crust doubtless traveled with the high speed of the transverse elastic wave, producing as it went violent tremors and thereby a loud sound, muffled by the snow beneath, along its entire course. At any rate, owing to the damage done by this snow, the annoyance it caused, and the strange sounds it produced, the date of its occurrence is now one of the fixed points in the local chronology.

¹ The complete original manuscript is on file at the central office of the Weather Bureau, Washington, D. C.